

82269

S/070/60/005/03/007/008

E132/E360

Certain Peculiarities in the Growth of Crystals of Ferrites Having the Garnet Structure

showed faces of the forms: cube, rhombic dodecahedron, trisoctahedron and their combinations. From their habit the crystals were seen to belong to the holosymmetric class, although the elongated crystals belonged to the tetragonal class morphologically but not structurally. Some drusy crystals were found. The elongated crystals seemed to have a greater rate of growth than the isometric and in general contained more cavities and other growth defects. The isometric crystals were also found to be superior to the tetragonal when their ferromagnetic resonance absorption curves were measured. Acknowledgments to Professor K.O. Belov, R.A. Voskanyan and V.F. Belov. There are 5 figures and 6 references: 3 Soviet and 3 English.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography of the Ac.Sc., USSR)

SUBMITTED: December 12, 1959

Card 2/2

9.2571

S/070/60/005/005/008/017
E132/E360

84122

AUTHORS: Belov, K.P., Belov, V.F. and Timofeyeva, V.A.

TITLE: Ferromagnetic Resonance in Single Crystals of
Yttrium Ferrite in the Temperature Range from Room
Temperature to the Curie Point

PERIODICAL: Kristallografiya, 1960, Vol. 5, No. 5,
pp. 732 - 736

TEXT: The temperature dependence of the parameters of the ferromagnetic resonance in single crystals of yttrium ferrite (garnet) from 20 to 300 °C has been measured. With increasing temperature the constant of the magnetic anisotropy (K_1) decreases but the g-factor scarcely changes. The resonant absorption line width H also decreases but grows again towards the Curie point. The effect of the different degrees of polishing on the line width was also studied. Crystals were grown by the method of Nielsen and Dearborn (J. Phys. Chem. Solids, Vol. 5, 202, 1958) in the form of tetrakis trioctahedra or of combinations of this form with the rhombic dodecahedron. These were ground into spheres of 0.8 to 1.0 mm diameter and

Card 1/3

S/070/60/005/005/008/017
E132/E360

84122

Ferromagnetic Resonance in Single Crystals of Yttrium Ferrite in the Temperature Range from Room Temperature to the Curie Point measurements were made at 9470 Mc/s. The spheres were oriented magnetically and mounted in a resonance chamber. With the size of sphere used, produced by air grinding, there was no correction for the size of the sphere. The surface finish, however, seriously affected the line width and the final polishing paper had a grain size of 1 μ . If the polishing powder had a grain size of 100 μ then the line width was 15 Oe but with the finest grinding this was reduced to 2.3 Oe. The Landé g-factor was found, as was expected from spectroscopic data, to be slightly different from 2. On three specimens it was measured as 2.03, 2.02 and 2.01 in each case $\pm$ 0.003. The resonance magnetic field for the three directions [100], [110] and [111] approached each other from the values of 3450, 3347 and 3313 Oe, respectively, at 20 °C and converged to the value 3364 Oe at 250 °C.

Card 2/3

84122
S/070/60/005/005/008/017
E132/E360

Ferromagnetic Resonance in Single Crystals of Yttrium in the
Temperature Range from Room Temperature to the Curie Point
There are 7 figures, 2 tables and 7 references: 2 Soviet and
5 English.

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography of the AS USSR)
SUBMITTED: March 18, 1960

Card 3/3

18.9500

1043, 1143, 1521

26652

S/070/61/006/005/010/011

E132/E560

AUTHORS: Timofeyeva, V.A. and Voskanyan, R.A.

TITLE: The creation of the conditions for directional crystallization when growing crystals of $Y_3Fe_5O_{12}$

PERIODICAL: Kristallografiya, 1961, Vol.6, No.5, pp.796-799

TEXT: The problem of growing single crystals of yttrium iron garnet is of practical importance for radiotechnology. In the effort to obtain big crystals slow cooling (tens to hundreds of hours) of a melt from 1250-1300°C to 900-1000°C has been used. D.T.A. of the system $PbO-PbF_2-Y_3Fe_5O_{12}$ has shown that the solubility increases sharply with temperature and at 1300°C 40% of garnet can be dissolved in 1:1 $PbO-PbF_2$. Full crystallization is found at 1100°C. Here the solvent is about 50% denser than the solute and crystallization takes place in the upper part of the crucible. In the conditions of directional crystallization the garnet grows as a thin layer on top of the melt. Growth in garnet proceeds on the faces of the rhombic dodecahedron and crystals appear either as true rhombic dodecahedra or as true tetragonal trisoctahedra or as combinations of these forms. The Card 1/3

The creation of the conditions ... ²⁶⁶⁵² S/070/61/006/005/010/011
E132/E560

most important moment in growing the crystal is the obtaining of the mono-crystalline seed-layer on the surface of the melt. In the experiments carried out in an open vessel the temperature conditions were most non-uniform and the first layer was polycrystalline leading to the formation of very small crystals. Very slow cooling (1°/hour) produced deposits of polycrystals at the edges of the crucible - 2 to 3°/hour was better. Sometimes there was formed not a single-crystal plate, but several large (1 cm³) crystals. The necessary conditions for the crystallization are the following:

1. Preparation of a saturated solution of $Y_3Fe_5O_{12}$ at 1260-1280°C;
2. The introduction of an extra amount of garnet to produce a local supersaturation at the surface of the melt;
3. The sharp lowering of the temperature by 30-40°C to form a thin seed film;
4. The smooth lowering of the temperature by 2-3°/hour to facilitate the continuous growth of the seed from the maximum temperature to 1100°C. There are 5 figures and 5 references: 3 Soviet and 2 non-Soviet. The English-language references read as follows:

Card 2/3

The creation of the conditions ...

26652
S/070/61/006/005/010/011
E132/E560

Ref.1: J. W. Nielsen, E. F. Dearborn. Phys. Chem. Solids, 5,3,
202-207, 1958; Ref.4: J. W. Nielsen. J. Appl. Phys., 31, 5, 279-280,
1960.

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography AS USSR)

SUBMITTED: March 11, 1961

Card 3/3

X

152660

30073

S/048/61/025/C11/C12/C13

B117/B102

242200

1121 1160 1137, 1144

AUTHORS:

Belov, K. P., Zaytseva, M. A., Kadomtseva, A. M., and
Timofeyeva, V. A.

TITLE:

Magnetic anisotropy and hysteresis properties of rare-earth
orthoferrites

PERIODICAL:

Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya. v. 25,
no. 11, 1961, 1389-1392

TEXT: Magnetic anisotropy was examined on single crystals of La, Pr, Nd, Sm, Eu, Gd, and Yb orthoferrites. The crystals were grown by spontaneous crystallization from their solution in a melt of lead compounds, lead oxide, and lead fluoride. The torque of the resulting crystals as a function of their angle of rotation with respect to an external magnetic field of up to 20 koe was measured with an anisometer. The torque curves drawn at room temperature resembled one another in the examined single crystals, and showed that the orientation of the magnetic moment in the axis of easiest magnetization is very stable against rotation of the outer field. This points to an exceedingly strong magnetic anisotropy of these

Card 1/4

30073

S/048/61/025/C11/013/031

B117/B102

Magnetic anisotropy and ...

orthoferrites. If the temperature is increased to the Curie point, the anisotropy of weak ferromagnetism is virtually not reduced. The characteristic phenomena of hysteresis and thermal remanence effects appearing in rare-earth orthoferrites can be explained also by the strong magnetic anisotropy. Thermal remanence phenomena were observed on polycrystalline La, Pr, and Yb orthosilicates (Ref. 5: Belov, K. P. Zartsava, M. A., Radomtseva, A. M., Zh. eksperim. i teon. fiz. 47, 111 (1965); Ref. 6: Watanabe, H. J. Phys. Soc. Japan, 14, 511 (1955)). Magnetization curves and hysteresis loops were recorded in magnetic fields of up to 20,000 oe by a pondermotive method. Specimens cooled in the magnetic field displayed asymmetric hysteresis loops with individual cycles. The thermal remanence was removed by a magnetic field of the order of 10,000 oe. This is indicative of the enormous coercive force of these orthoferrites. A partial substitution of nonmagnetic Al^{3+} ions for Fe^{3+} ions was performed in polycrystalline La and Pr orthoferrites. A sharp diminution of both coercive force and thermal remanence phenomena was observed along with a steep rise of magnetization. The latter may be explained by a prevailing diminution of the exchange field. On the other hand, the growth of magnetization is possibly associated with the greater

Card 2/4

Magnetic anisotropy and ...

30073
S/048/61/025/011/019/031
B117/B102

difference in the magnetization of the two sublattices of Fe^{3+} ions, when they are partly replaced by nonmagnetic Al^{3+} ions. However, the Curie point is lowered in every case. Compositions in which Fe^{3+} ions were partly replaced by magnetic Cr^{3+} ions were examined. As compared with stoichiometric compositions, the coercive force diminishes sharply in La and Pr orthoferrites, when Cr^{3+} ions are introduced. As expected, and unlike Al^{3+} ions, Cr^{3+} ions do not change magnetization very much. The Debye diagrams taken by A. A. Katsnel'son and K. Yatskul'yan showed that all the examined compositions are solid solutions without any foreign phase. Ye. A. Turov is thanked for his help and for having discussed the results obtained. V. A. Naysh (Fizika metallov i metallovedeniye, 2, 10 (1960); 11, 161 (1960)) is mentioned. There are 5 figures and 6 references: 2 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: Bozorth, R. M., Phys. Rev. Letters, 1, 362 (1958); Gilleo, M. A., J. Chem. Phys. 24, 1239 (1956); Watanabe, H., J. Phys. Soc. Japan, 14, 511 (1959).

Card 3/4

Magnetic anisotropy and ...

30073
S/048/61/025/011/019/031
B117/B102

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gos. universiteta im.
M. V. Lomonosova (Physics Division of Moscow State
University imeni M. V. Lomonosov)

X

Card 4/4

24,7100

36117

S/070/62/007/002/014/022

E132/E160

AUTHORS: Timofeyeva, V.A., and Popova, A.S.

TITLE: Certain peculiarities in the growth of single crystals of potassium niobate and tantalate

PERIODICAL: Kristallografiya, v.7, no.2, 1962, 300-304

TEXT: The systems $K_2O - Nb_2O_5$ and $K_2O - Ta_2O_5$ have been studied by differential thermal analysis. The conditions for the growth of single crystals of $KNbO_3$ and $KTaO_3$ have been worked out using methods of growth from various melts. Dielectric and piezoelectric properties of $KNbO_3$ have been measured; in particular dielectric constant, the piezoelectric modulus d_{33} and the conductivity. In growing crystals it was found that initial overheating of the melt destroyed nuclei and led to later supercooling. There was thus some difficulty in obtaining homogeneous melts. This could be overcome by seeding followed by prolonged heat treatment (several days at constant temperature). Crystals of $KNbO_3$ up to 1 cm cube were obtained by this method of

Card 1/2

Certain peculiarities in the growth... S/070/62/007/002/014/022
E132/E160

removing the heat of crystallisation at constant temperature.
The variable colour of the crystals appeared to be connected with
the oxygen content. The darker the crystal, the lower the
resistivity. There is a significant piezoelectric effect which
may make the material technically useful.
There are 5 figures and 1 table.

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography, AS USSR)

SUBMITTED: March 11, 1961

Card 2/2

S/070/63/008/002/015/017
E021/E120

AUTHORS: Timofeyeva V.A., and Voskanyan R.A.

TITLE: The problem of growing corundum crystals from solution in a lead fluoride melt

PERIODICAL: Kristallografiya, v.8, no.2, 1963, 293-296

TEXT: It was established that the solubility of Al_2O_3 in PbF_2 was 40% at 1280 °C but only a few percent at 888 °C, and growth of crystals took place in a wide temperature region (1200-1300 °C). The crystals had a flat habit and goniometric measurements showed that the faces were pinacoid (0001) and two rhombohedra (1011) and (2021). When chromium oxide was introduced into the crystal, the red color of ruby was formed. Because the rate of growth of the pinacoid face was least, the amount of Cr_2O_3 was the greatest on this face and the central part of the crystal was more strongly colored than the periphery. On the other hand, the quickly-growing faces of the crystals (the rhombohedra) held a mechanical mixture to a greater degree. Liquid inclusions of PbF_2 solidified on cooling. A large number of spirals were formed on the surfaces

Card 1/2

The problem of growing corundum ... S/070/63/008/002/015/017
E021/E120

of thin plates during fast cooling.
There are 8 figures.

ASSOCIATION: Institut Kristallografii AN SSSR
(Institute of Crystallography, AS USSR)

SUBMITTED: May 18, 1962

Card 2/2

1942/0943

Author: Ismofayeva, V. A.

TITLE: Corundum crystallization from a gas phase involving a chemical reaction

SOURCE: Kristallografiya, v. 9, no. 6, 1964, 942-943, and insert facing p. 938

ABSTRACT: Corundum, grown, corundum crystal, alumina, crystal, vapor phase crystallization, corundum crystallization, gas phase reaction, lead fluoride

SUBMITTED: 309ep63

ENCL: 00

SUB CODE: 55

NO REF SOV: 002

OTHER: 001

ATD PRESS: 3148

Card 2/2

TIMOFEEVA, V.A.; LEBEDEVA, T.V.; KONKOVA, T.S.

Morphological characteristics of garnets grown from solution in
PbO and PbF_2 melts. Kristallografiia 10 no.1:92-95 Jan-F '65.
(MIRA 18:3)

1. Institut kristallografi AN SSSR.

TIMOFEYEV, V.A.

Crystallization of corundum from the gaseous phase when a chemical reaction takes place. Kristallografiia 9 no.6:942-943 N-D '64.
(MIRA 18:2)

1. Institut kristallografi AN SSSR.

"APPROVED FOR RELEASE: 07/16/2001

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APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R001755720019-4"

L 2-723-05

AMERICAN INDIAN

14-7

A L 11873-66 EWT(1)/EWT(m)/T/EWP(t)/EWP(b) IJP(c) JD/GG

ACC NR: AT6002238

SOURCE CODE: UR/2564/65/006/000/0086/0092

AUTHOR: Timofeyeva, V. A.

ORG: Institute of Crystallography, AN SSSR (Institut kristallografi AN SSSR)

TITLE: Conditions of growing of Al_2O_3 , ZnO , and Ga_2O_3 crystals

SOURCE: AN SSSR. Institut kristallografi. Rost kristallov, v. 6, 1965, 86-92

TOPIC TAGS: single crystal growing, aluminum oxide, lead oxide, zinc oxide, gallium compound, crystallization

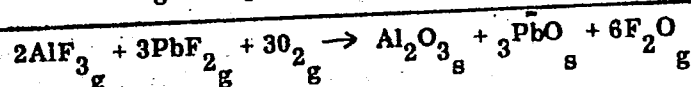
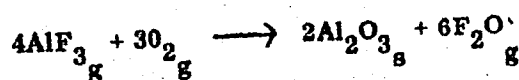
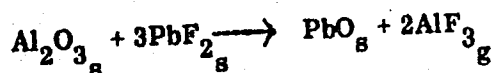
ABSTRACT: Al_2O_3 single crystals (corundum) were grown from solution in molten PbF_2 by using seeds. It was found that as the proportion of PbF_2 in the mixture increases, the tendency of corundum to crystallize from the gas phase (in addition to its crystallization from the melt) increases; in this case, Al_2O_3 crystals grow as a result of a chemical transport reaction, i. e., the formation of the intermediate compound AlF_3 , as follows (s = solid, g = gas):

Card 1/2

L 11873-66

ACC NR: AT6002238

15



Since fluorine oxide is constantly removed from the reaction, both reactions are shifted to the right, insuring the formation of Al_2O_3 crystals. ZnO crystals also grow from solution in molten PbF_2 , but ZnO has a higher vapor pressure than Al_2O_3 , considerable evaporation losses occur. A similar preparation of Ga_2O_3 crystals (hexagonal, rhombic, or monoclinic modification depending upon the temperature) is described. Author thanks L. D. Prokhorov, A. I. Malyshev, V. P. Mayorov, T. V. Lebedeva, and T. S. Kon'kova, who participated in the experimental part of the work. Orig. art. has: 7 figures.

SUB CODE: 20 / SUBM DATE: none/ ORIG REF: 002/ OTH REF: 003

Card 2/2 HW

L 20724-00 SWP(m)/SWA(d)/SWP(t) 10/10/ 00/00

ACC NR: AP6011471

SOURCE CODE: UR/0070/66/011/002/0289/0294

AUTHOR: Timofeyeva, V. A.; Kvapil, Y. 57

ORG: Institute of Crystallography, AN SSSR (Institut kristallografi AN SSSR) 13

TITLE: On the solubility and crystallization of $Y_3Al_5O_{12}$ from solutions in melts of $PbO-B_2O_3$ and $PbO-B_2O_3-PbF_2$

SOURCE: Kristallografiya, v. 11, no. 2, 1966, 289-294

TOPIC TAGS: garnet, crystal growing, yttrium compound, aluminum compound, crystallization, solubility, temperature dependence 27 27 18

ABSTRACT: The authors investigated the solubility of the yttrium-aluminum garnet in low-volatility melts by a simple procedure, based on introducing a small primer crystal of the dissolved substance ($Y_3Al_5O_{12}$) and checking whether the solution is undersaturated or supersaturated by seeing whether the primer melts or causes precipitation of a larger crystal. The temperature dependence of the solubility is determined by the same method. The results show that in the same temperature region the solubility of $Y_3Al_5O_{12}$ is higher in $PbO-B_2O_3-PbF_2$ than in $PbO-B_2O_3$. The method can be used to grow $Y_3Al_5O_{12}$ crystals with the aid of primers, to estimate approximately the equilibrium state of the system, and to outline the stable regions of crystallization in the multi-component system $Y_2O_3-Al_2O_3-PbO-B_2O_3-PbF_2$. Related to this procedure is a method described for determining the saturation of the solution, consisting of dropping a rod of platinum into the melt and drawing it out so as to pro-

Card 1/2

UDC: 548.5

L 26754-66

ACC NR: AF6011471

duce a microscopic crystal of the substance by quenching. It is concluded that the quenching method can be used for an approximate estimate of the state of equilibrium of the system but for more accurate data it is necessary to use trial primers as originally employed. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 24May65/ ORIG REF: 003/ OTH REF: 008

Card

2/2 *fv*

L 41059-66 EWT(1)/EWP(e)/T /EWP: t)/ETI IJP(c) WG/JD/GG/WH/JG
ACC NR: AP6027762 SOURCE CODE: GE/0030/66/016/002/K165/K166

AUTHOR: Bobomolova, G. A.; Kaminskii, A. A.; Timofeyeva, V. A. 50 B

ORG: Institute of Crystallography, Academy of Sciences USSR

TITLE: Optical ^{2/}centers in Y₃Al₅O₁₂:Nd³⁺ ⁵crystals

SOURCE: Physica status solidi, v. 16, no. 2, 1966, K165-K166

TOPIC TAGS: laser ~~rad~~ d, paramagnetic laser, rare earth element, garnet, optical center, neodymium laser 27

ABSTRACT: Preliminary results are reported on investigation of Nd³⁺ optical centers in Y₃Al₅O₁₂ crystals grown at the Institute of Crystallography. The crystal specimens had an Nd³⁺ concentration from 0.2 to 12 wt%. The investigations of their absorption spectra were carried out at 300K in the 0.2—2.5 μm range using an SP-700 spectrophotometer. The most convenient groups of lines were selected for further detailed investigation (⁴D_{3/2}—3628 Å, ²P_{3/2}—3849 Å, ²D_{5/2}—4224 Å, ²P_{1/2}—4318 Å, ⁴F_{3/2}—8685, 8750, 8752, 8760, and 8862 Å). The absorption in these groups was recorded at 77K using a DFS-12 diffraction spectrometer with a resolution of 0.1 Å. Sb-Cs and O-Cs photocathodes were used as optical detectors. The crystal were mounted between two quartz light pipes and directly plunged into liquid nitrogen. 27

Card 1/2

L 41059-66

ACC NR: AP6027762

Fig. 1 represents an analysis of the $Y_3Al_5O_{12}:Nd^{3+}$ absorption spectra. A comparison of the curves shows clearly that they can be divided into three systems, designated

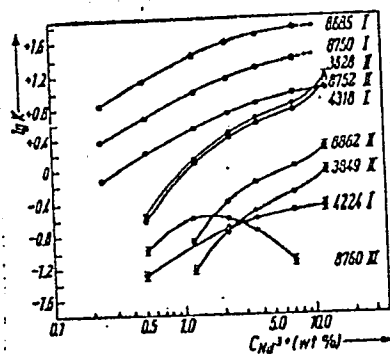


Fig. 1. Absorption coefficients at λ_{max} for lines of the $^4D_{3/2}$, $^2P_{3/2}$, $^2D_{5/2}$, $^2P_{1/2}$, and $^4F_{3/2}$ groups

I, II, and III in the figure. Each of these is a family of parallel curves which belong to optical centers with different structures. Orig. art. has: 1 figure. [YK]

SUB CODE: 20/ SUBM DATE: 06Jul66/ ORIG REF: 005/ OTH REF: 003/ ATD PRESS: 5252

Card 2/2 *lth*

ACC NR: AP7001884

SOURCE CODE: UR/0362/66/002/012/1259/1266

AUTHOR: Timofeyeva, V. A.; Vostroknutov, A. A.; Koveshnikova, L. A.

ORG: Black Sea Branch, Marine Hydrophysical Institute, (Chernomorskoye otdeleniye Morskogo gidrofizicheskogo instituta)

TITLE: The effect of asymmetry of illumination on the light field-inside a turbid medium

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 12, 1966, 1259-1266

TOPIC TAGS: light field, turbid medium, sea brightness, polarimeter, light polarization, polarization plane

ABSTRACT:

Results are described of the initial investigations of a light field in turbid liquid media illuminated with sunrays (a flux of a 50 x 50 cm cross section) inclined to the surfaces of the media. The experimental setup, consisting of a special container, a heliostat, and a photoelectric polarimeter, is described in detail. It was determined that, analogous to other turbid media such as the atmosphere and colloids, neutral points and regions of "negative" polarization also exist in turbid liquid media. The experiments showed that in turbid liquid media at depths at which the scattering multi-

Card 1/2

UDC: 535.361:551.521.3:551.463.5

ACC NR: AP7001884

plicity is not too great, the asymmetry of illumination exerts a considerable effect on the brightness and the degree of polarization of light. In turbid media, including the sea, there are four neutral points and two regions of "negative" polarization. The angular distance between these points decreases as the sun rises. The plane of polarization light in a turbid medium can occupy a different position in space and only in certain cases coincides with the scattering plane, or is perpendicular to it. Therefore, the terms positive and negative should not be used. Orig. art. has: 9 figures.

SUB CODE: 08/ SUBM DATE: 20Apr66/ ORIG REF: 011/ ATD PRESS: 5112

Card 2/2

BELOV, K.P.; KADOMTSEVA, A.M.; LEDNEVA, T.M.; OVCHINNIKOVA, T.L.;
TIMOFEYEVA, V.A.

Characteristics of the temperature dependence of the magnetization
of thulium orthoferrite. Pis'. v red. Zhur. eksper. i teor.fiz.
2 no.6:253-259 S '65. (MIRA 18:12)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta
imeni Lomonosova. Submitted July 8, 1965.

L 15768-66 EWP(:)/EWT(m)/EWP(t)/EWP(k)/EWP(z)/EWP(b) IJP(c) JD/JG/WH

ACC NR: AP5027677

SOURCE CODE: UR/0051/65/019/005/0817/0819

AUTHOR: Feofilov, P. P.; Timofeyeva, V. A.; Tolstoy, M. N.; Belyayev, L. M.

ORG: none

TITLE: Luminescence of neodymium and chromium in an yttrium-aluminum garnet

SOURCE: Optika i spektroskopiya, v. 19, no. 5, 1965, 817-819

TOPIC TAGS: spectroscopy, crystal lattice structure, luminescence, neodymium, chromium, yttrium, *crystal growing, single crystal*

ABSTRACT: Crystals of Y-Al garnet (YAG) were grown in a fluoride and lead oxide melt. Neodymium and chromium were added to the melt in the form of oxides to activate the crystals, and the infrared luminescence spectrums of the YAG-Nd single crystals were determined in the regions of all four groups of radiations, situated near 0.9, 1.1, 1.4, and 1.8 μ and corresponding to the transition from the excited $^4F_{3/2}$ term to the terms $^4I_{9/2-15/2}$. The spectrums were taken at 77K by the diffraction spectrometer with receiver from PCS and the radiations of the first group were, in addition, photographed on I-920 film in a spectrograph with a

1/2

UDC: 535.37 : 548.0

L 15768-66

ACG NR: AP5027677

dispersion of ~ 13 A/mm. The value of splitting of the $^4F_{3/2}$ ($\Delta E = 84 \text{ cm}^{-1}$) was much larger than that of the lanthanum halides and scheelite crystals. This indicated the larger force of the intercrystalline field, which was substantiated by the splitting values of the ^4I terms. But the relative splitting of individual ^4I terms was the same as in the scheelite and other bases: the largest splitting was observed in the $^4I_{15/2}$ and $^4I_{9/2}$ terms (976 and 857 cm^{-1}). It was noticeably smaller in the $^4I_{13/2}$ and $^4I_{11/2}$ terms (574 and 518 cm^{-1}). The study of Nd luminescence was facilitated by the presence of Cr^{3+} in the crystals, which sensitized the luminescence of Nd^{3+} . The absorption spectrums of Cr^{3+} in YAG were described by D. J. Wood et al. (J. Chem. Phys., 39, 890, 1963). The effect of the sensitization of Nd luminescence by Cr^{3+} was proven both by spectral and by kinetic studies. The results agreed entirely with those of Z. J. Kiss and R. C. Duncan (Appl. Phys. Lett., 5, 200, 1964) on the nonradiative resonance transfer of YAG of excitation energy from chromium to neodymium ions. Orig. art. has: 2 figures.

SUB CODE: 30/ SUBM DATE: 15Apr65/ ORIG REF: 003/ OTH REF: 005

2/2

KLASSEN-NEKLYUDOVA, M.V.; GOVOROV, V.G.; PAPKOV, V.S.; URUSOVSKAYA, A.A.;
TIMOFEYEVA, V.A.

Plastic deformation of a nickel single crystal. Part 2: The effect of temperature and rate of deformation on the compression curves and microstructure of nickel. Fiz. met. i metalloved. 18 no.2:263-269 Ag '64. (MIRA 18:8)

1. Institut kristallografii AN SSSR.

TIMOFEYEVA, V.A.; BYCHKOV, V.Z.

Growing potassium niobate crystals from a solution in a
potassium carbonate melt on seed crystals. Rost krist. 4:
140-143 '64. (MIRA 17:8)

TIMOFEYEVA, V. A.

Cand. Physicomath Sci.

Dissertation: "Complex Light Scattering in Turbid Media."

18/10/50

Moscow Order of Lenin State U. imeni.

M. V. Lomonosov.

SO Vecheryaya Moskva
Sum 71

TIMOFEYeva, V. A.

184T101

USSR/Physics - Optics

11 Feb 51

"Distribution of Brightness in Strongly Dispersive Media," V. A. Timofeyeva, Moscow Hydrophys Inst.
Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXVI, No 5, pp 677-680

Describes exptl work on problem of studying distribution of brightness in strongly dispersive media whose coeff of absorption is negligibly small in comparison with coeff of dispersion for various conditions of illumination of the media. Submitted 19 Dec 50 by Acad V. V. Shuleykin.

184T101

185T59

USSR/Geophysics - Sea, Brightness 21 Feb 51
Distribution of

"Problem Concerning the Distribution of Brightness in the Sea," V. A. Timofeyeva, Marine Hydrophys Inst, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXVI, No 6, pp 831-833

In studies of distribution of light in the sea most investigators have employed unshielded photoelements and have detected the weakening with depth of illumination for variously oriented surfaces. According to the theory of the light field, however, to characterize fully the

USSR/Geophysics - Sea, Brightness 21 Feb 51
Distribution of (Contd)

distribution of light in the sea it is necessary to detect the variation with depth of brightness distribution for various directions; to do this, it is necessary to select narrow beam and carefully shielded photoelement from interfering action of lateral light. Describes 4 graphs of subject distribution. Submitted 8 Dec 50 by Acad V. V. Shuleykin.

185T59

USSR .

6.3-350
Timofeeva, V. A. O rasseianii sveta mutnykh sredami. [Scattering of light through
turbid media.] *Priroda*, Moscow, 41(6):98-100, June 1952. fig. D.L.C.—A general qualita-
tive discussion of the penetration of light below the surface of sea water, illumination of sea
water and its relationship to extinction and scattering, the variation of brightness with depth
(illustrated by a graph) on the basis of experimental laboratory studies and the actual condi-
tions of illumination in the sea. Subject Heading: 1. Scattering of light in water.—A.L.D.

TIMOFEEVA, V. A.

✓ Compound scattering of light in turbid media. V. A. Timofeeva. *Trudy Morskogo Gidrofiz. Inst., Akad. Nauk S.S.S.R.* 3, 35-81 (1953); *Referat. Zhur., Khim.* 1954, No. 35718. —The scattering of light by media with an absorption coeff. insignificantly small as compared to the coeff. of scattering was studied. As such media, milk dild. with water and a rosin emulsion were used. *CH*
B. M. Hosen

TIMOFEYEVA, V. A.
USSR/Physics

Card 1/1

Author : Timofeyeva, V. A.

Title : Experimental investigation of light diffusion in cloudy media

Periodical : Usp. Fiz. Nauk, 52, Ed. 3, 477 - 485, March 1954

Abstract : Author investigated the diffusion of light in a cloudy medium filling an infinitely semi-space at various conditions of illumination. Media with very high diffusion coefficient and very low absorption coefficient (diluted milk, colophony, soap solutions) were used in the role of the object. The work and experimental results described in this report enable to compile a clear chart of the diffusion of light in cloudy media at low absorption and high diffusion coefficients as well as reveal the basic relations existing in this case. This study reveals great possibilities for rational simplification of the theoretical treatment of problems concerning repeated diffusion and for semi-quantitative estimations necessary for the solution of practical problems.

Institution: :

Submitted :

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 6,
p 57 (USSR) 14-57-6-12055

AUTHOR: Timofeyeva, V. A.

TITLE: A Heliostat With a Large Mirror (Geliostat s bol'shim
zerkalom)

PERIODICAL: Tr. Mor. gidrofiz. in-ta AN SSSR, 1956, Vol 7, pp 153-
160

ABSTRACT: This study explains the design of the heliostat
planned and built by the Marine Hydrophysical Institute
of the AS USSR, -- the drawings of its basic com-
ponents, a description of the apparatus, and in-
structions on how to set it up. The heliostat is used
to pick up a strong beam of parallel light rays, which,
in lateral cross section, form a homogeneous field of
light, 70 cm in diameter. The beam is first reflected
in the direction parallel to the earth's axis, by a

Card 1/2

. A Heliostat With a Large Mirror (Cont.)

14-57-6-12055

fairly large heliostatic mirror. It is then reflected from a second (stationary) mirror, and produces a working unit; it is directed vertically, so as to facilitate the study of a bright light in turbid media. Design computations for both mirrors are included. The heliostat has been operating successfully for a year and a half.

M. G.

Card 2/2

TIMOFEEVA, V.A.

AUTHOR:

Timofeeva, V.A.

49 - 2 - 13/13

TITLE:

The relation between the dispersion coefficient of a directed beam of light and the coefficient of weakening of light in turbid media. (Zavisimost' mezhdru koeffitsientom rasseyaniya napravlennogo svetovogo potoka i koeffitsientom oslableniya predel'no rasseyannogo sveta v mutnykh sredakh).

PERIODICAL:

Izvestiya Akademii Nauk, Seriya Geofizicheskaya, 1957, No.2, pp. 265-272.

ABSTRACT:

In an earlier paper (1) the author showed that the coefficient of weakening of limit-scattered light is a characteristic of turbid media which is equally important to that of the scattering coefficient. The aim of this paper is to establish the relation between the coefficient of weakening of directed and diffused light fluxes in turbid media in which it is no longer

Card 1/4

TITLE:

49 - 2 - 13/13

The relation between the dispersion coefficient of a directed beam of light and the coefficient of weakening of light in turbid media. (Zavisimost' mezhdru koeffitsientom rasseyaniya napravlennogo svetovogo potoka i koeffitsientom oslableniya predel'no rasseyannogo sveta v mutnykh sredakh).

possible to disregard the absorption coefficient as compared to the scattering coefficient and also to determine the dependence between the magnitude of a parameter and the coefficient of absorption; the influence of the scattering indicatrix is not considered. The experimental apparatus for determining the weakening coefficient is described and some measured values are given. The experiments were carried out, using an incandescent lamp as a source of light, whose radiation is shifted towards the long wave part of the spectrum as compared to sunlight. The obtained results are considered as probably correct. However, the sensitivity of the apparatus was not high enough to obtain the desired data at various sufficiently narrow spectrum ranges.

Card 2/4

TITLE:

49 - 2 - 13/13

The relation between the dispersion coefficient of a directed beam of light and the coefficient of weakening of light in turbid media. (Zavisimost' mezhdu koeffitsientom rasseyaniya napravlennogo svetovogo potoka i koeffitsientom oslableniya predel'no rasseyannogo sveta v mutnykh sredakh).

If perfected, the method of separate determination of the coefficient of absorption and of scattering described here can be applied also to solid turbid media of the type of scattering lenses.

The text includes 4 graphs, 3 photographs, and 1 diagram. There are 3 references, all Slavic.

ASSOCIATION: Academy of Sciences of the USSR, Black Sea Division of the Naval Hydrophysical Institute. (Akademiya Nauk SSSR, Chernomorskoye otdeleniye Morskogo gidrofizicheskogo instituta).

Card 3/4

49 - 2 - 13/13

TITLE:

The relation between the dispersion coefficient of a directed beam of light and the coefficient of weakening of light in turbid media. (Zavisimost' mezhdu koeffitsientom rasseyaniya napravlennogo svetovogo potoka i koeffitsientom oslableniya predel'no rasseyannogo sveta v mutnykh sredakh).

PRESENTED BY:

SUBMITTED: 5/23/56

AVAILABLE: Library of Congress

Card 4/4

TIMOFEYEVA, V.A.

Propagation of light in the sea. Trudy MGI 11:97-104 '57.

(Light-scattering)

(MIRA 11:3)

(Sea water--Optical properties)

AUTHOR:

TITLE:

TIMOFEEVA, V.A.

PA - 3142

PERIODICAL:

The Shape of the Brightness Distribution Stationary Diagram as Dependent on the Ratio of Absorption and Scattering Coefficients. (Zavisimost' formy statsionarnoy diagrammy raspredeleniya yarkosti ot otnosheniya koefitsiyentov pogloshcheniya i rasseyaniya. Russian). Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr. 3, pp 556 - 559 (U.S.S.R.)

Received: 6 / 1957

Reviewed: 7 / 1957

ABSTRACT:

Unlike the previous practice these tests were carried out in different spectral domains, i.e. by using colored filters. The angle of vision of the photometer was varied from 5 to 15°. The dispersion coefficient k of the milk-medium was determined on the Koenig-Martens-spectrometer. The determination of the absorption coefficient m_{col} of the colored milk-medium was equal to the determination of the absorption of the slightly colored (i.e. with the same concentration of dye) water. There follows the description of the process of determining m_{col} . The diagram for the brightness distribution for various absorption - and dispersion coefficients was determined. On the basis of the experiments the relations between the quantity R (relative brightness $B_{\varphi=0} / B_{\varphi \neq 0} = R$, where $B_{\varphi=0}$ is the brightness in the direction of the light source, and $B_{\varphi \neq 0}$ is the brightness in any other

Card 1/2

PA - 3142

The Shape of the Brightness Distribution Stationary Diagram as Dependent on the Ratio of Absorption and Scattering Coefficients. direction φ) and the ratio m_{col}/k is found separately for the green and the blue filter respectively. Both straight lines coincided. Thus, the relation $(R, m_{col}/k)$ is universal and valid for all wavelengths.

The following empirical relation was found: $R = 1 + \frac{m}{k}$. The parameter μ characterizes the inclination of the straight line in the diagram and depends on the angle φ . From this equation the shape of the steady diagram of the distribution of the maximum of the dispersed light can be determined according to directions of brightness. By means of the same equation it is, however, possible to solve the inverse problem: to find the relation m/k for a dim medium according to the given ratio of the brightness R for any angle φ . In conclusion a computation example is given. (With 3 illustrations and 1 citation from a Slavic publication).

Institute for Marine Hydrophysics of the Academy of Science of the U.S.S.R.

Member of the Academy, SHULEYKIN, V.V.

29.11.1955

Library of Congress

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE:

Card 2/2

TIMOFEEVA, V.A.

Apparatus for determining the attenuation coefficient of directed
light in the sea. Trudy MGI 20:100-105 '60. (MIRA 13:10)
(Oceanographic instruments)
(Water--Optical properties)

TIMOFEYEVA, V.A.

Polarization of light in turbid media. Izv.AN SSSR.Ser.geofiz.
no.5:766-774 My '61. (MIRA 14:4)

1. Akademiya nauk SSSR, Morskoy gidrofizicheskiy institut.
(Polarization) (Turbidity) (Water--Optical properties)

TIMOFEYEVA, V.A.

One of the methods for the separate determination of the absorption and dispersion coefficients of turbid media. Opt. i spektr. 10 no.4:533-534 Ap 1961. (MIRA 14:3)
(Turbidity)

TIMOFEEVA, V. A.

Black Sea Div, Marine Hydrophysical Inst

"A Study of the Polarization Characteristics of the Light Field in Turbid Media"
Moscow, Doklady Akademii Nauk SSSR, Vol 140, No 2, 1961, pp. 361-364

A study of the polarization of light in turbid media has been studied under laboratory conditions in connection with investigation of polarization of light in the sea. Waterman and Ivanoff have worked in this field, but have developed no generally applicable laws. This laboratory study emphasizes polarization of light scattered at great depths and does not duplicate any work done previously. The laboratory apparatus is described in some detail. Figure 1 is a graph showing brightness and the degree of polarization as a function of depth. Figure 2 is a diagram showing the distribution of polarization in different directions as a function of the ratio of the coefficients of absorption and scattering.

TIMOFEYEVA, V.A.

Spatial distribution of the degree of natural light polarization
in the sea. Izv.AN SSSR. Ser.geofiz. no.12:1843-1851 '62.
(MIRA 16:2)

1. Chernomorskoye otdeleniye Morskogo gidrofizicheskogo
instituta AN UkrSSR.

(Polarization (Light))
(Sea water)

TIMOFEEVA, V.A.

Degree of polarization of the natural light in the sea, Dokl.
AN SSSR 147 no.3:604-607 N '62. (MIRA 15:12)

1. Chernomorskoye otdeleniye Morskogo gidrofizicheskogo instituta
AN UkrSSR. Predstavleno akademikom V.V. Shuleykinym.
(Polarization (Light)) (Seawater—Optical properties)

TIMOFEYEV, V.A.; KAYGORODOV, M.N.

Marine photoelectric polarimeter. Okeanologiya 3 no.3:506-
516 '63. (MIRA 16:8)

1. Chernomorskoye otdeleniye Morskogo gidrofizicheskogo instituta
AN UkrSSR pos. Katseveli.
(Polariscope)

L 13127-63

ENT(1)/BDS/ES(v) AFFTC/ASD/ESD-3/AFGC/SSD Pe-4/Pi-4 GN
S/049/63/000/004/004/005

AUTHOR: Timofeyeva, V.A.

TITLE: Use of a white disk for determination of the coefficients of absorption and of diffusion of light in turbid environments

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya goefizicheskaya, no. 4, 1963, 621-625

TEXT: Up to now a sufficiently simple and reliable method for separate determinations of the coefficients of absorption and diffusion in turbid media (in this work in sea waters) has not been developed. The author, as well as others, have been interested in the use of a white standard disk (Sekki disk) for the determination of the optical constant of sea water. Though some investigators concluded this was not possible, the author's studies indicated that such a conclusion is premature. A method is proposed for the separate determination of the coefficients of absorption

Card 1/3

L 13127-63

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S/049/63/000/004/004/005

Use of a white disk...

(α) and diffusion (σ) in turbid media with the aid of a white disk. The method was developed on the basis of experiments in synthetic environments. The details of the experimental procedure and the description of the white disk are given. A view of the white disk is shown. The disk diameters are 5, 10, 20, and 40 mm and they are made of glazed porcelain. Measurements were made in media with $0 < X < 1$ where $X = \sigma / \alpha + \sigma$. Experimental data are presented graphically for 1) the relationship of τ (the depth of disappearance of the white disk vs. X (the dimensionless constant) for $\omega \approx 0.014, 0.028, 0.056$, and 0.112 where ω -- angular dimension of the disk at the moment of disappearance, and 2) the relation of τ vs. ω for media with any value of X (range 0.50-1.00). The accuracy of α and σ depends largely on the accuracy of the measurement of the depth of the disappearance of this or any white disk and also on the value of X . For media where $X > 0.5$, the procedure is suitable, but for $X < 0.5$ further studies are needed for the relation of the length of light waves. There are 3 figures and 10 references. The only English language reference is Jerlov, N.G., Optical studies of ocean waters, Rep. Swedish deep-sea exp., III, 1951.

Card 2/3

L 13127-63

Use of a white disk...

S/049/63/000/004/004/005

ASSOCIATION: Akademiya nauk UkrSSR, Chernomorskoye otdeleniye, morskogo
gidrofizicheskogo instituta (Academy of Sciences of UkrSSR,
Black Sea Division of the Marine Hydrophysical Institute).

SUBMITTED: September 22, 1962

Card 3/3

L 10174-66 EWT(d)/EWT(l)/EWT(m)/EWT(n)-2/EWT(t)/EWT(b) IJP(c) JD/WJ/JG
 ACC NR: AP5026400 SOURCE CODE: UR/0386/65/002/006/0253/0256
 44.55 44.55 44.55 44.55
 AUTHOR: Belov, K. P.; Kadomtseva, A. M.; Ledneva, T. M.; Ovchinnikova, T. L.; 69
 Timofeyeva, V. A. 44.55
 ORG: Physics Faculty of the Moscow State University im. M. Lomonosov (Fizicheskiy
 fakul'tet Moskovskogo gosudarstvennogo universiteta) 27
 TITLE: Features of the temperature dependence of the magnetization of thulium ortho-
 ferrite
 SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu.
 Prilozheniye, v. 2, no. 6, 253-256
 TOPIC TAGS: thulium compound, temperature dependence, magnetization, magnetic moment
 ABSTRACT: The authors observed an anomalous temperature dependence in the magnetiza-
 tion of thulium orthoferrite. When the temperature was reduced to 90K the magnetic
 moment was reoriented from the c axis to the a axis of the crystal. Below 90K, the
 spontaneous magnetic moment of the single-crystal thulium orthoferrite remained ri-
 gidly oriented along the a axis of the rhombic crystal. By plotting the rotary mo-
 ments in the (001) plane of the single-crystal thulium orthoferrite at temperatures
 78 to 4.2K, the authors obtain, from the rotary moment $\phi = 90^\circ$, the values of the
 magnetization at different temperatures. The temperature dependence thus obtained
 for the magnetization is shown in Fig. 1. At 92K the spontaneous magnetization along
 the a axis is zero for at this temperature the magnetic moment is still oriented
 along the c axis of the crystal. After a slight decrease in the temperature ($\sim 2^\circ$),
 Card 1/2

L 10174-66

ACC NR: AP5026400

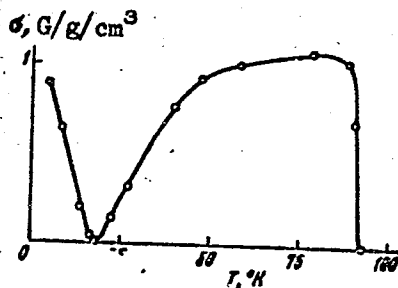


Fig. 1. Temperature dependence of the spontaneous magnetization of single-crystal thulium orthoferrite along the a axis.

measurements that the magnetic-compensation points observed for the majority of rare-earth ferrites with garnet structure are also possessed by some orthoferrites of rare-earth elements. Orig. art. has: 2 figures and 1 formula.

the magnetization along the a axis increases rapidly, reaching a value 1 G/g/cm³, owing to the reorientation of the magnetic moment from the c axis to the a axis. With further drop in temperature, the magnetization decreases smoothly, vanishing at 18K. Below 18K, the spontaneous magnetization along the a axis again begins to increase. The vanishing of the spontaneous magnetization is obviously the result of compensation of the magnetic moments of the iron and thulium ions, which should be observed if the exchange interaction between these ions is negative. An analogous phenomenon was apparently observed by the authors earlier for samarium orthoferrite at 4.2K (FMM v. 19, 778, 1965), but it was difficult to present an unambiguous explanation of the phenomenon observed there, since no measurements were made below the compensation point. It follows from the

SUB CODE: 20/ SUBM DATE: 08Jul65/ ORIG REF: 002/ OTH REF: 002

Card 2/2

ACC NR: AP6011376

(N)

SOURCE CODE: UR/0362/66/092/063/0320/0323

AUTHOR: Timofeyeva, V. A.; Koveshnikova, L. A.

46
B

ORG: Marine Hydrophysical Institute (Morskoy gidrofizicheskii institut)

TITLE: Experimental determination of the extinction coefficient of turbid media

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 3, 1966, 320-323

TOPIC TAGS: light reflection coefficient, light scattering, light absorption, photometric analysis

ABSTRACT: Since errors are possible when determining the extinction coefficient of turbid (scattering and absorbing) media owing to so-called stray light entering the receiving part of the photometer and by multiply scattered light, the authors elucidate the effect of stray light on the results of a photometric analysis of scattering media, or the dependence of the effective extinction coefficient measured by various photometers on the angle of divergence of the luminous flux illuminating the medium. An approximate method of estimating the true extinction coefficient is also given. The media were photometered so that the effect of multiply scattered light could be disregarded. Milky media with a specific absorption appreciably less than water were used as the scattering media. Measurement of the extinction coefficient in such media

Card 1/2

UDC: 551.593

ACC NR: AP6011376

amounted to, in essence, a measurement of the effective scattering coefficient. Measurements of the scattering coefficient were made on six instruments with different angles of divergence of the luminous flux illuminating the medium. Six methods are used for determining the scattering coefficient of milky media. The ratio of the scattering coefficient measured by one or another of the methods to the unknown scattering coefficient is laid out on the y-axis and the corresponding angles of divergence are plotted on the x-axis of the derived curves. It is apparent in the curves that all points practically lie on the same smooth curve and that an increase of divergence of the luminous flux leads to an appreciable underestimation of the scattering coefficient. It is shown that the error in determining the scattering coefficient owing to stray light is proportional to the solid angle of divergence of the beam to a power of 0.18 and not to the first power as has been assumed. Consequently the error increases with an increase of the solid angle appreciably more slowly than has been proposed. This is apparently explained by the appreciable length of the scattering indicatrix of a milky medium. It is emphasized that this work should only be treated as the start of important practical investigations. Only the dependence of the scattering coefficient measured by various instruments on the angle of divergence of the luminous flux illuminating the medium is studied, but the error will undoubtedly depend upon the dimensions of the scattering particles, wavelength, and magnitude of specific absorption. Orig. art. has: 1 table, 4 figures, and 9 formulas.

SUB CODE: 20/ SUBM DATE: 12Jun65/ ORIG REF: 005/ OTH REF: 001

Card 2/2

ACC NR: AR7004106 (N) SOURCE CODE: UR/0169/66/000/012/V024/V024

AUTHOR: Timofeyeva, V. A.

TITLE: Experimental study of the light field in the sea

SOURCE: Ref. zh. Geofizika, Abs. 12V144

REF SOURCE: Sb. 2-y Mezhdunar. okeanogr. kongress, 1966. Tezisy dokl. M., Nauka, 1966, 372-373

TOPIC TAGS: underwater light, light polarization, light scattering, ~~sea light field~~ OCEAN PROPERTY

ABSTRACT: In 1948, at the instigation of Academician V. V. Shuleykin, experimental studies of the light field in turbid media in general and in the sea in particular were begun at the Black Sea Branch of the Marine Hydrophysical Institute of the Ukrainian Academy of Sciences. An experimental base was created. Adequate special equipment made it possible to establish a number of new relationships and dependences characterizing the light field in turbid media

Card 1/2

UDC: 551.465.5

ACC NR: AR7004106

under various conditions of illumination. The results of laboratory investigations were found to be valid not only for sea optics but also in the most varied fields: atmospheric optics, astrophysics, lighting engineering, photography, spectroscopy of dispersed media, etc. At this time, most of the empirical have been confirmed theoretically. Spatial distribution of brightness, the degree of polarization and the position of the polarization plane in turbid media under various conditions of illumination, their connection with the optical parameters of the medium and with the depth and length of the light wave, are presented. Results of laboratory studies are compared with the results of direct measurements in the sea. The reason that the optical depth of standard white disk disappearance is different in different seas has been explained. It was established that this depth does not depend on the value of the coefficient of extinction, but on the share of scattering in the general attenuation of light. The spatial distribution of the degree of polarization of natural light in the sea, which was obtained for the first time, is presented. Its dependence on depth and the length of the light wave is shown. The advisability of continuing studies on light conditions not only in the sea but also in a number of related areas, is stressed. [Translation of abstract]

[DW]

SUB CODE: 012, 20/

Card 2/2

LOZHKOMOEVA, A.D.; TRESTMAN, A.G.; LEONT'YEVA, R.S., mladshiy nauchnyy sotrudnik; PODOLYAN, A.F.; TRET'YAKOVA, O.I.: Prinimali uchastiye: PAVLOVA, I.A., inzh.; GORYACHEVA, G.A., starshiy tekhnik; SELI-VERSTOVA, Z.P., starshiy tekhnik; FEDOSOVA, M.I., tekhnik; GORSHKOVA, M.I., tekhnik; KOPEYKA, V.K., tekhnik; TIMOFEYEVA, V.F., tekhnik; KOSINOVA, Z.I., tekhnik. GONCHAROV, Ye.P., otv. red.; USHAKOVA, T.V., red.; SERGEYEV, A.N., tekhn.red.

[Agroclimatic reference book on the Tajik S.S.R.] Agroklimatechskii spravochnik po Tadzhikskoi SSR. Leningrad, Gidrometeor. izd-vo, 1959. 151 p. (MIRA 13:2)

1. Stalinabad. Gidrometeorologicheskaya observatoriya. 2. Stalinabadskaya gidrometeorologicheskaya observatoriya Upravleniya gidrometeorologicheskoy sluzhby Tadzhikskoy SSR (for Lozhkomoyeva, Trestman, Podolyan, Tret'yakova). 3. Institut pochvovedeniya AN Tadzhikskoy SSR (for Leont'yeva).
(Tajikistan--Crops and climate)

S/187/63/000/002/001/004
A004/A126

AUTHORS: Timofeyeva, V. G., Sherman, F. S., Podgorodetskiy, Ye. K.

TITLE: Investigating relaxation processes in triacetate films

PERIODICAL: Tekhnika kino i televideniya, no. 2, 1963, 21 - 26

TEXT: The authors investigated the relaxation in nonplasticized cellulose acetate films with different contents of combined acetic acid and at different degrees of tension and temperature. It was found that the cellulose acetate composition affects the relaxation process. The higher the amount of hydroxyl groups in the cellulose acetate, the more difficult is the relaxation process. Then the relaxation process in plasticized films of partially saponified cellulose triacetate was studied at different temperatures and tensions. It was found that the type of plasticizer added to the film affects its macrostructure. Plasticizers of low activity result in a greater reduction in tension under temperature effects than do films without plasticizers. If active plasticizers are added to the film composition, inner stresses resulting from heating due to the effect of loads are more easily removed. Such a film, after relieving the stresses, is in an equilibrium state and is subjected to a minimum shrinkage after watering. To produce
Card 1/2

Investigating relaxation processes in...

S/187/63/000/002/001/004
A004/A126

film bases with such properties, the drying portion of the casting machine should be equipped with devices allowing accurate control of the base tension. Besides, it is necessary to increase the temperature in the final zones of the drying portion of the casting machine up to 120°C. There are 4 figures and 3 tables.

Card 2/2

KOZLOV, P.V.; TIMOFEEYEVA, V.G.; KARGIN, V.A., akademik

Effect of low molecular weight substances sorbed by super-molecular structures on the mechanical properties of rigid-chain polymers. Dokl.AN SSSR 148 no.4:886-889 F '63. (MIRA 16:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova i
Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut.
(Polymers) (Chemical structure)

YAVORSKIY, S.I.; TIMOFEYEVA, V.G.

Potentiometric method for determining the oxidability of natural formation waters. Zav.lab. 28 no.8:929-930 '62. (MIRA 15:11)

1. Gosudarstvennyy institut prikladnoy khimii.
(Water, Underground) (Potentiometric analysis) (Oxidation)

KOZLOV, P.V., TIMOFEYEV, V.G., KARGIN, V.A.

Effect of small admixtures of low-molecular substances on the mechanical properties of rigid chain polymers.

Report presented at the 13th Conference on high-molecular compounds
Moscow, 8-11 Oct 62

TIMOFEYEV, V.I., inzh.

Aluminum coating of diesel parts. Energomashinostroenie 4 no.2:42
F '58. (MIRA 11:4)

(Aluminum coating)

NIKITIN, M.D.; TIMOFEYEVA, V.I.

Remarks on V.A. Ivanov and G.P. Kim's article. Lit. proizv.
no.12:38-39 D '61. (MIRA 14:12)

(Founding)
(Ivanov, V.A.) (Kim, G.P.)

、 TIMOFEYEVA, V.I.

Increasing the scale resistance of parts of the chamber of combustion of an engine. Trudy TSNIDI no.37:52-56 '61. (MIRA 15:3)
(Steel--Corrosion)

TIMOFEYEVA, Vera Ivanovna; NIKITIN, Mikhail Dmitriyevich; FEDOROV, Sergey Fedorovich; BARANOV, I.A., inzh., red.; SHILLING, V.A., red. izd-va; GVIRTS, V.L., tekhn. red.

[Manufacturing unit-cast turbine runners by the method of precision investment molding with centrifugal pouring] Opyt izgotovleniia tsel'nolitnykh koles turbin metodom lit'ia po vyplavliaemym modeliam s tsentrobezhnoi zalivkoi. Leningrad, 1961. 14 p. (Leningradskii Dom nauchno-tekhnicheskoi propagandy . Obmen peredovym opytom. Seria: Liteinoe proizvodstvo, no.3) (MIRA 14:7)
(Precision casting)

T. MORSE, V.L.; CH. NICHOL, V.M.

Automatic stabilization and rolling control system. Technical report
no. 8-20-12. Ag. 164. (MTR 17-10)

BORZENKO, G.M., inzh.; ZHIDKOV, A.A., inzh.; TIMOFEYEVA, V.I., inzh.

Automatic controllers of the EAUS-u electronic system.
Teploenergetika 10 no.6:81-86 Je '63.

(MIRA 16:7)

1. Vsesoyuznyy teplotekhnicheskii institut.

(Electric controllers) (Automatic control)

TIMOFEYeva, V.I.

Content of available molybdenum in Podzolic and turf-
schungite-rich soils in Kondopoga and Medvezh'yegorsk
Districts. Uch.zap.Petrozav.gos.un. 11 no.4:81-86 '63.
(MIRA 19:1)

SECRET

Excluded from automatic downgrading and declassification
17a
(SIRA 13:2)

AUTHOR: Timofeeva, V. K.

669.776/.777:542.61

TITLE: Extraction of selenium and tellurium

SOURCE: Isvestyye metall, no. 7, 1968, 34-35

ABSTRACT: The authors have studied the extraction of selenium and tellurium from their solutions in organic solvents by means of organic solvents. The authors have also studied the extraction of selenium and tellurium from their solutions in organic solvents by means of organic solvents.

In the extraction of selenium and tellurium from their solutions in organic solvents by means of organic solvents, the authors experimented with the extraction of selenium and tellurium from their solutions in organic solvents by means of organic solvents.

CSG 1/3

ACCESSION NUMBER

Since selenium has the property of giving chloridic anion complexes in
HCl solutions, extraction of Se(VI) as SeCl₆²⁻ is possible.

TIMOFEYeva, V.K.; Zharova, S.P.

Selenium sorption from soda and sulfuric acid solutions.
TSvet. met. 38 no.11:93-96 N '65. (MIRA 18:11)

LASKORIN, B.N.; TIMOFEYEV, V.K.

Separation of nickel and cobalt on anion exchangers containing complex-forming groups. Zhur. prikl. khim. 36 no.9: 2071-2073 D '63. (MIRA 17:1)

TIMOFEEVA, V.K., LASKORIN, B.N.

Tellurium sorption from sulfuric acid and alkali solutions
on resins of various structure. TSvet. met. 37 no.11:01-84
N 164, (MIRA 18:4)

LASKORIN, B.N.; TIMOFEYEVA, V.K.; ZARUBIN, A.I.

Complex formation in the sorption of cobalt (II) and nickel (II)
on the carboxylic resin SG. Zhur. fiz. khim. 37 no.12:2694-
2697 D '63. (MIRA 17:1)

LASKORIN, B.N.; TIMOFEYEVA, V.K.

Separation of cobalt and nickel by means of anion exchangers.

Zhur.prikl.khim. 36 no.1:37-41 Ja '63.

(MIRA 16:5)

(Cobalt--Analysis)

(Nickel--Analysis)

(Ion exchange)

LASKORIN, B.N.; TIMOFEEVA, V.K.

Sorption recovery of cobalt and nickel from ammonia solutions. TSvet.
met. 37 no.6:23-25 Je '64. (MIRA 17:9)

TITLE: Study of the electrical conductivity of arsenic-sulfur-germanium system

SOURCE: Leningrad. Universitet. Khimicheskaya fizika i fizika tverdogo tela (Leningrad, Izd-vo Leningr. univ.), 1963, 75-86

TOPIC TAGS: arsenic compound, germanium compound, sulfur compound, glass conductivity, vitreous semiconductor

ABSTRACT: A total of 164 batches of glass consisting of arsenic, sulfur, and n-type germanium in various proportions were subjected to different types of heat treatment. The probable chemical compositions of the melts, corresponding to the formula $As_xS_yGe_{1-x-y}$, were calculated for all glasses, and are tabulated. The results of the composition of the glasses and the effect of heat treatment on the electrical conductivity are discussed.

Card 1/2

ACCESSION NR AT5017260

Report on application for entry of *H* The application is for entry of *H* into the system of data
14. The application is for entry of *H* into the system of data 14. The application is for entry of *H* into the system of data 14.

ASSOCIATION None

SUBMITTED 1 MAR 61

ENTRY 14

FILE CODE MT, FM

NO REF SIV 14

OTHER 14

Card 2/2 *ADD*

... ..

TOPIC TAGS arsenic compound, selenium compound, sulfur compound, glass conductivity, ...

... ..

... ..

L 60431-04

ACCESSION NR: AT5017264

Substitution of
consider-

ASSOCIATION: None

ASSOCIATION: None

EXEMPTED: 1Mar87

EXEMPTED: 1Mar87

EXEMPTED: 1Mar87

NO REF SOV: 007

OTHER: 006

S/054/62/000/004/014/017
B101/B186

AUTHORS: Myuller, R. L., Orlova, G. M., Timofeyeva, V. N.,
Ternovaya, G. I.

TITLE: The range of vitrification in the system arsenic - sulfur -
germanium

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii,
no. 4, 1962, 146-150

TEXT: The physicochemical properties of glasses in the system As - S - Ge were studied. Attempts to obtain binary GeS_x melts ($x = 1.0-4.0$) in the glassy state failed. Optimum conditions for producing glassy melts: heating of the charge in ampoules for 1.5-2 hrs at 250°C , for 6-7 hrs at 450°C , for 2 hrs at 850°C (at somewhat lower temperature with high S content), cooling to room temperature of the ampoule remaining in the furnace. 60 samples were melted (Fig.). The glasses of the system AsS_xGe_y can be classified in four groups: (I) $x - 2y \geq 1.5$; (II) $1.0 \leq x - 2y < 1.5$; (III) $0 \leq x - 2y < 1.0$; (IV) $x - 2y < 0$. Composition, density, glass group, molecular weight, content of structural units $[\text{GeS}_{4/2}]$, $[\text{AsS}_{3/2}]$, $[\text{AsS}_{2/2}]$,
Card 1/3

The range of vitrification in...

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B101/B186

[$\text{SS}_{2/2}$], [$\text{AsAs}_{3/3}$], and [$\text{GeGe}_{4/4}$], and the microhardness of the glassy melts are tabulated. The microhardness values calculated from the structural formula agree well with the experimental data (mean deviation 8%). There are 1 figure and 2 tables. ✓

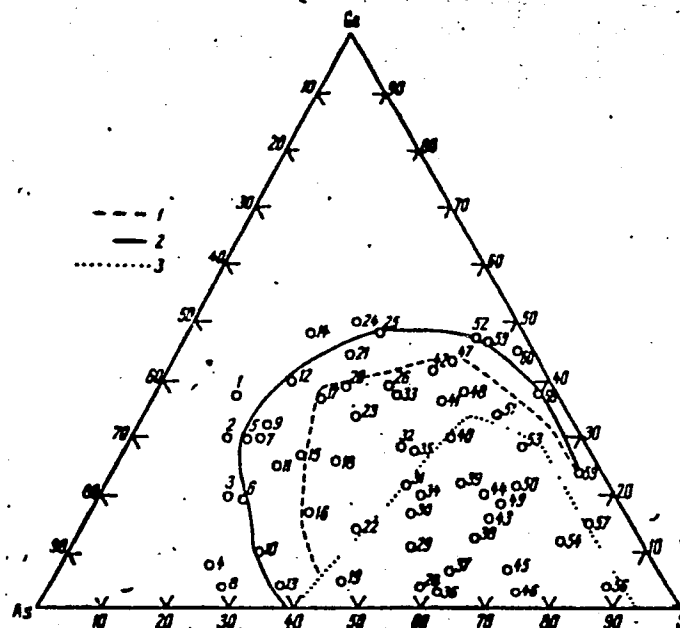
SUBMITTED: April 1962

Fig. Boundary of vitrification in the system As - S - Ge. --- boundary of vitrification; — boundary of crystallization; boundary of vitrification according to B. T. Kolomiyets, N. A. Goryunova, V. P. Shilo (Collection "Stekloobraznoye sostoyaniye" [Glassy State], M.-L., Izd. AN SSSR, 456, 1960)

Card 2/3

The range of vitrification in...

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B101/B186



Card 3/3

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S/054/62/000/004/015/017
B101/B186

AUTHORS: Timofeyeva, V. N., Borisova, Z. U.

TITLE: Electrical conductivity of some glassy $\text{AsS}_x\text{Se}_y\text{Ge}_z$ compositions

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 4, 1962, 155-159.

TEXT: It was investigated whether the introduction of tetrahedral $[\text{GeS}_{4/2}]$ structural units in glassy $[\text{AsS}_{3/2}]$ increases the through conductivity of the current carriers and the $\log \beta$ which is -3.5 for $\text{AsS}_{3/2}$. It was found that the conductivity of glasses having the chemical composition AsS_xGe_z ($x = 1.7-4.5$, $z = 0.1-0.5$) leads to poorly reproducible values due to the complicated structure and the sensitivity to thermal treatment. In binary systems having the same composition. Partial substitution of Se for S, however, stabilizes the conductivity. The ionization energy, the energy of conductivity, and $\log \beta$ are given for the compositions:

$\text{AsS}_{0.85}\text{Se}_{0.85}\text{Ge}_{0.1}$ 1.8, 2.0 ± 0.1 , -0.9; $\text{AsS}_{0.95}\text{Se}_{0.95}\text{Ge}_{0.2}$ 1.9, 2.0 ± 0.1 ,

Card 1/2

Electrical conductivity of some...

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-1.5; $\text{AsS}_{1.25}\text{Se}_{1.25}\text{Ge}_{0.5}$ 1.9, 2.4 ± 0.1 , +0.1; $\text{AsS}_{1.75}\text{Se}_{1.75}\text{Ge}_{2.0}$,
 2.3 ± 0.1 , +0.1; $\text{AsS}_{2.25}\text{Se}_{2.25}\text{Ge}_{1.5}$ 2.0, 2.0 ± 0.1 , -2.2. Introduction of
 $[\text{GeS}_{4/2}]$ structural units thus caused through conductivity, and $\log \beta$
 increased to -1.5. The low value $\log \beta = -2.2$ of the composition
 $\text{AsS}_{2.25}\text{Se}_{2.25}\text{Ge}_{1.5}$ has not been clarified and requires further investigation.
 There are 3 figures and 3 tables.

SUBMITTED: June 1962

Card 2/2

MYULLER, R.L.; ORLOVA, G.M.; TIMOFEYEV, V.N.; TERNOVAYA, G.I.

Glass-forming boundary in the system arsenic - sulfur - germanium.
Vest.LGU 17 no.22:146-150 '62. (MIRA 15:12)
(Arsenic) (Vitreous state)

TIMOFEYEVA, V.N.; BORISOVA, Z.U.

Conductivity of some vitreous $\text{AsS}_x\text{Se}_y\text{Ge}_2$ materials. Vest. LGU
17 no.22:155-159 '62. (MIRA 15:12)
(Arsenic) (Vitreous materials--Electric properties)

TIMOFEYeva, V.N.

Extraction of nickel and cobalt by alkyl phosphates. TSvet, nat.
38 no.2:85-86 F '65. (MIRA 18.3)